Summary of Testis

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if you found it useful kindly share!

TESTICULAR TUMORS

Etiology

1) Incomp. descended tetsis esp. intra-abdominal.
2) Klinefelter's $.
3) Iso-chromosome 12p. (80% of testicular tumors)

99% of testicular tumors are maliq. / Bilat. in 3-5%

Germ cell Tumors (85%)
1) Seminoma. 40%
2) Teratoma. (Non- seminoma) 32%
3) Combined. 14%

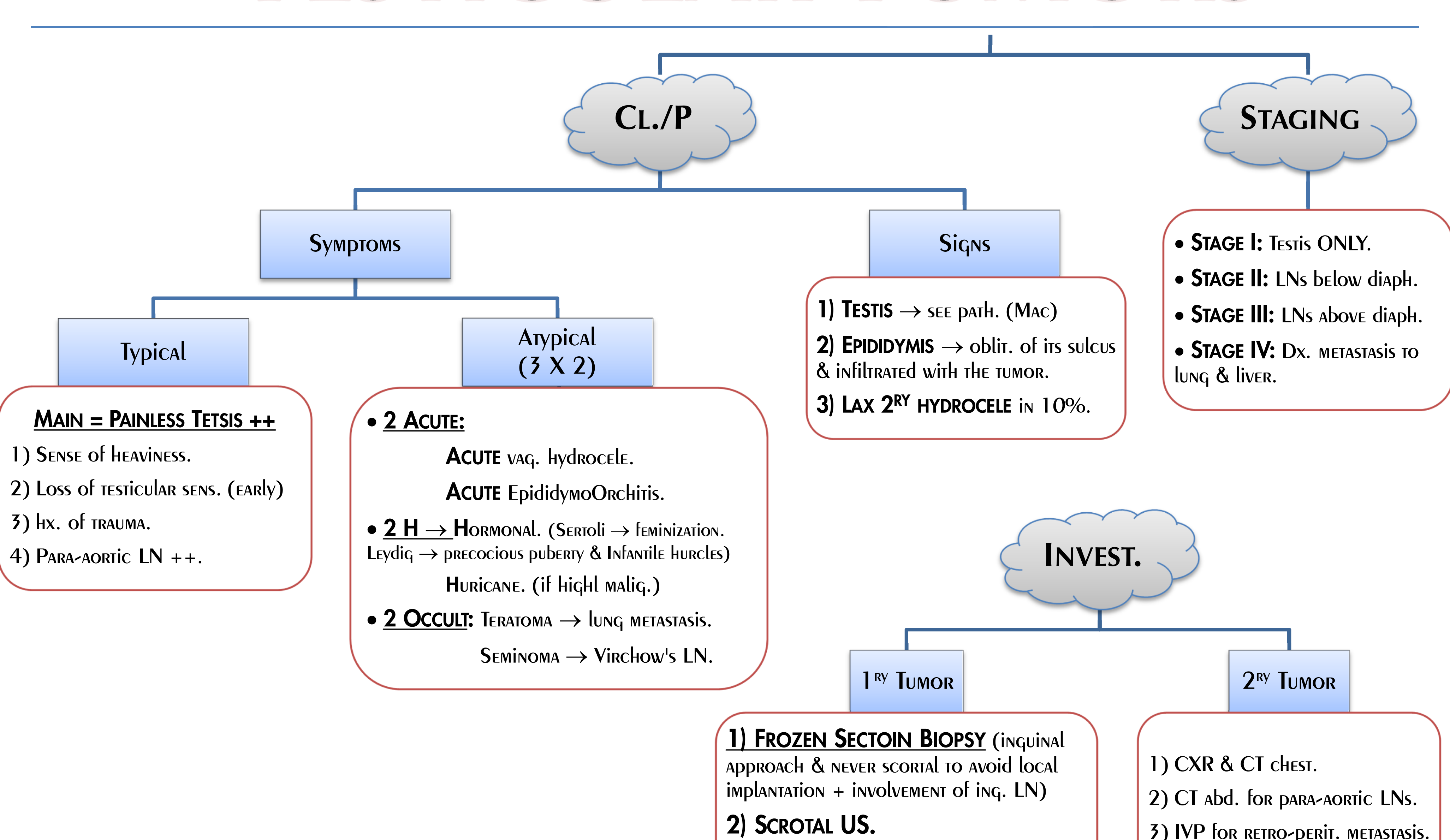
Interstitial tumors (1.5%)
1) Leydiq Cell tumor.
2) Sertoli cell tumor:
   - After puberty.
   - Bening - feminize.

2RY Tumors
- Lymphoma. 7%
- Leukimic infilt.
- Metastatic.

	SEMINOMA (40%)	**TERATOMA** (32%)
Age	35 – 45 ys.	20 – 35 ys.
Cell of Origin	Spermatocytes in the Seminiferous tubules.	Embryonic (Totipotent) cells in the rete testis.
Mac.	• Size → Moderate to large. • Surface → Smooth – lobulated. • C/S → homog. & pink creamy in color.	• Size → Variable (small as a peanut large as coconut) • Surface → Smooth. • C/S → heterog. & Yellow containing gelat. mat. & cartilage.
Mic.	1) Sheets of Rounded or oval cells resemble Spermatocytes: • Rounded or oval cells. • Vacuolated cytoplasm. 2) Lymphocytic infiltration.	1) Dermoid cyst. (Maliq. Teratoma Differentiated) 2) Terato-Carcinoma (M/C). (Maliq. Teratoma Intermediate) 3) Emberyonal carcinoma. (Maliq. Teratoma Anaplastica) 4) Choriocarcinoma. (M/D) (Maliq. Teratoma Trophoblastica) 5) Endodermal Sinus Tumor. "EST"
Spread (Mainly)	Lymphatics to the para-aortic & iliac LNs.	Blood mainly to lungs.
Tumor markers (see Invest.)	1) β-HCG in 10%. 2) LDH.	1) β-HCG in 100% of Chorio-carcinoma. 2) α -FP in 75%.
TTT. & Staging	• high Retro-grade inguinal Orchiectomy in both! • Post-op. Radioth. for LNs & Cisplatin for dx. metastasis.	• Postop. Chemotherapy. (highly radio-resistant) • Retro-peritoneal Lymphadenectomy after chemo th.

LDH:
- *Leukemia.*
- *Lymphoma.*
- *Seminoma.*
- *Pulm. Embolism*

TESTICULAR TUMORS



TESTICULAR CYSTS

	Epididymal Cysts	Spermatocele	Hydrocele		
			Encysted Hydrocele of the SC	Cong. Hydrocele of the TV	1^{ry} Vaginal Hydrocele
Etio.	Degenerative cysts of the vestigial embryonal remnants. (remnant of mesonephric tubules)	Retention cysts from the tubules of Vasa efferentia	Persistent intermediate part of process vaginalis	Persistence of the whole process vaginalis	Unknown but: • Repeated sub-clinical infection. • Or repeated trauma.
C/P	Painless scrotal swelling.	Painless scrotal swelling but sometimes v. large → mistaken for 3rd testis.	Painless scrotal swelling at the spermatic cord	Mother complains that her infant has scrotal swelling with Diurnal variation.	Painless scrotal swelling. 1) *Infection → pyocele.* *Calcification – Rupture.* 2) *Hge → hematocele.* *Herniation through ! dartos ms.*
Site	• Just above & behind ! testis. • Multilocular + crystal clear fluid	• Just above ! testis. • Unilocular – smooth.	• Above the Sp. cord separated by Gap.	• Abd. exam. → ± TB peritonitis is the 1st manifest	• Scrotal neck test = purly scrotal swelling. • Scrotal US if testis is impalpable.
Sp. ccc.	• Brilliant translucent with numerous septa & tessellated → Chinese lantern app.	Dimly Translucent (Barley water in app. dt sperms)	• Translucent, moves from side to side not along the cord.	• Fills gradually on standing & empties on lying down & elevating the scrotum.	• Moves from side to side not along the cord.
Consist	• Tense cystic. (not lax)		• Tense cystic. • +ve Traction. (fixed)	• Cystic.	• Cystic Translucent with bi-polar fluctuation test & dull percussion.
TTT.	1) No TTT. is required. 2) Excision if discomfort *but the pt. should be warned that it would interfere with the transport of sperms from testis.*	1) Small → ignore. 2) Large → Excision but the pt. should be warned.	Excision through an inguinal incision.	Upper part → Excision. Lower part → Eversion.	Surgical & NEVER Aspiration dt: a) Recurrence. / inf. / hge. b) If testicular tumor → implantation. 1) **Eversion of TV**. (any fluid formed will be drained by the scrotal lymphatic) 2) **Sub-total excision of TV** → if large, thick walled or calcified. 3) **Lords'** → incision & plication of TV.
DD	1) Spermtocele / Epidermal Cyst. 2) Encysted hydrocele of SC. 3) Vaginal hydrocele.		hydrocele of ! hernial sac.	Infantile hydrocele	2^{ry} Vaginal hydrocele

EPIDIDYMO-ORCHITIS

ACUTE EPIDIDYMO-ORCHITIS

ETIOLOGY:

- CA → E. Coli – Staph. & Strept – Proteus – Chlamydia.
- SOI → UTI along the vas – peri-vasal lymph. – bl. stream.

CL./P:

- Dysuria + FAHM. (39^0)
- Acute painful scrotal swelling ↓ by elevating the scrotum.
- 2^{ry} hydrocele.

DD = TORSION TESTIS.

INVEST.:

1) Urine analysis – C&S.
2) Duplex to exclude Torsion.

COMPLICATIONS:

1) Testicular abscess.
2) Testicular atrophy.
3) Chronicity.

TTT.

1) R AAA. (Quinolones)
2) If abscess → Drainage
3) Lead sub-acetate.

ACUTE FILARIAL FUNICULO EO

3 diff.
- Endemic areas.
- Acute. (sup. – gang. - fulminating)
- Matting of the cord.

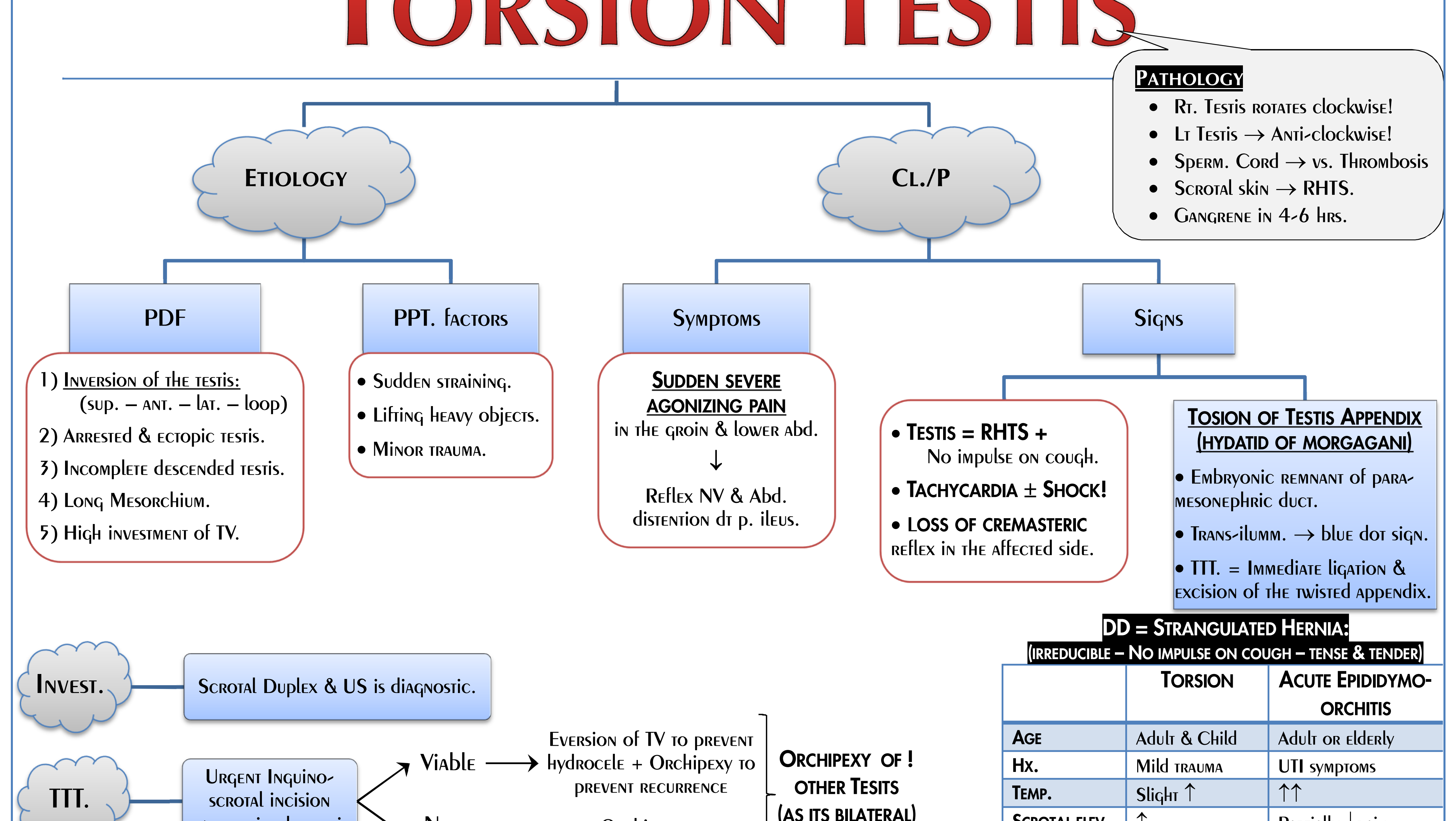
Invest= Eosinophilia + μ filarial bl. film.

TTT. = Anti-filarial.

CHRONIC EPIDIDYMO-ORCHITIS

	TB	B	FILARIASIS
ROI	1) Blood borne. (rare) 2) Lymph. spread form the urinary tract via Vas.	Worms reach pampiniform plexus via 2 routes: • Vesico-prostatic plexus of veins. • SM through Anastomosis bet. mesenteric & spermatic vs.!	Through lymphatics
Site (M/C)	• lymph. borne → tail then ! rest. • Blood borne → head then ! rest!	Perivascular affection: • Grandular type. • Nodular type.	All of the cord becomes thick & matted.
The Cord	Vas only is affected. (thickened & beaded in lymph. born)	• Intact Vas. • Beading of veins.	Vas. (matted) can't be identified.
Testis & Epidyd	Nodular & swollen. testis is rarely affected	Fine nodules & non-tender	Swollen & tender
2^{ry} hydrocele	Small lax hydrocele	moderate	Large hydrocele
DRE	TB nodules in the seminal vesicle & prostate. Urine & semen analysis for TB by ZN & LJ medium.	Chronic fibrotic prostatita	free
TTT.	1) Anti-TB drugs. 2) If failed > 2ms. → Excision of Vas deferens & epididymis	1) Anti-bilhrzial drugs. 2) Surgical excision → Settle the diagnosis & relieve the dragging pain.	Only medical: ABS & hetrazan.

TORSION TESTIS



	TORSION	ACUTE EPIDIDYMO-ORCHITIS
AGE	Adult & Child	Adult or elderly
HX.	Mild trauma	UTI symptoms
TEMP.	Slight ↑	↑↑
SCROTAL ELEV.	↑	Partially ↓pain
U. ANALYSIS	Free	Pus cells
DUPLEX	Obst. vs.	Patent vs.

UN-DESCENDED TESTIS

PATH.

INCIDENCE:

1) Rt. testis = 50%
2) Lt. testis = 30%.
3) Bilateral = 20%.

SITE OF ARREST *(acc. to freq.):*

1) External ring.
2) Scrotal neck.
3) Inguinal canal.
4) Abdominal.

ETIOLOGY

Bilateral cases

dt hormonal defect & ass. with hypo-gonadism & slipped upper epiphysis

Unilateral cases

dt Anatomical barrier

1) Short testicualr a. ✓
2) Ass. hernial sac.
3) Inadeq. inguinal canal.
4) Rtetro-perit. adhesiins.
5) Rupture gubernaculum.

CL./P

Symptoms & Signs

Empty scrotal compart. + Not well developed + Testis is

1) *Palpated* if arrested at ext. ring or neck of scrotum.
2) *Impalpable* if intrta-abd.
3) *diif. to plapate* in ing. canal.
4) Cong. hernia in 80-90%

Complications = 4T

1) Tumor.
2) Trauma. (abnorm. site)
3) Tortion.
4) aTrophy → loss of Spermatogensis sparing intrstitial cells → (N) 2^{ry} sex ccc. & erection.

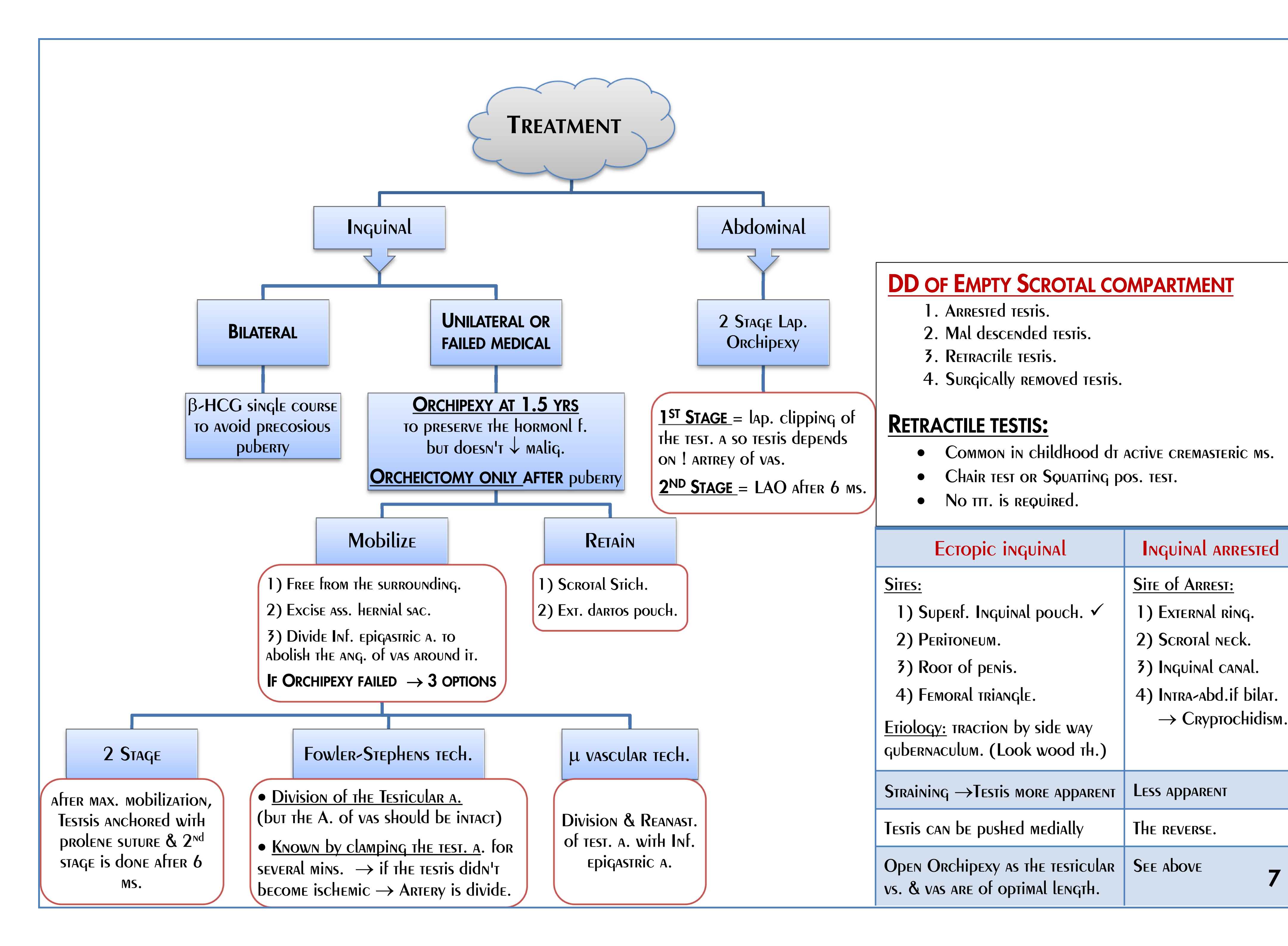
INVEST.

for Implapable Tetsis only

1) Laparoscopy. (Diag.)
2) Abd. US & CT scan.
3) MRI if failed to localize.

Ain Shams Classif. of Abd. Undescended Testis

- Type I: No testis is visualized.
- Type II: at Int. ring + Vas & vs. looping to the internal ring
- Type III: at int. ring + Vas & vs. going directly to testis. (no looping)
- Type IV: Abd. testis not related to int. ring.



DD of Empty Scrotal compartment

1. Arrested testis.
2. Mal descended testis.
3. Retractile testis.
4. Surgically removed testis.

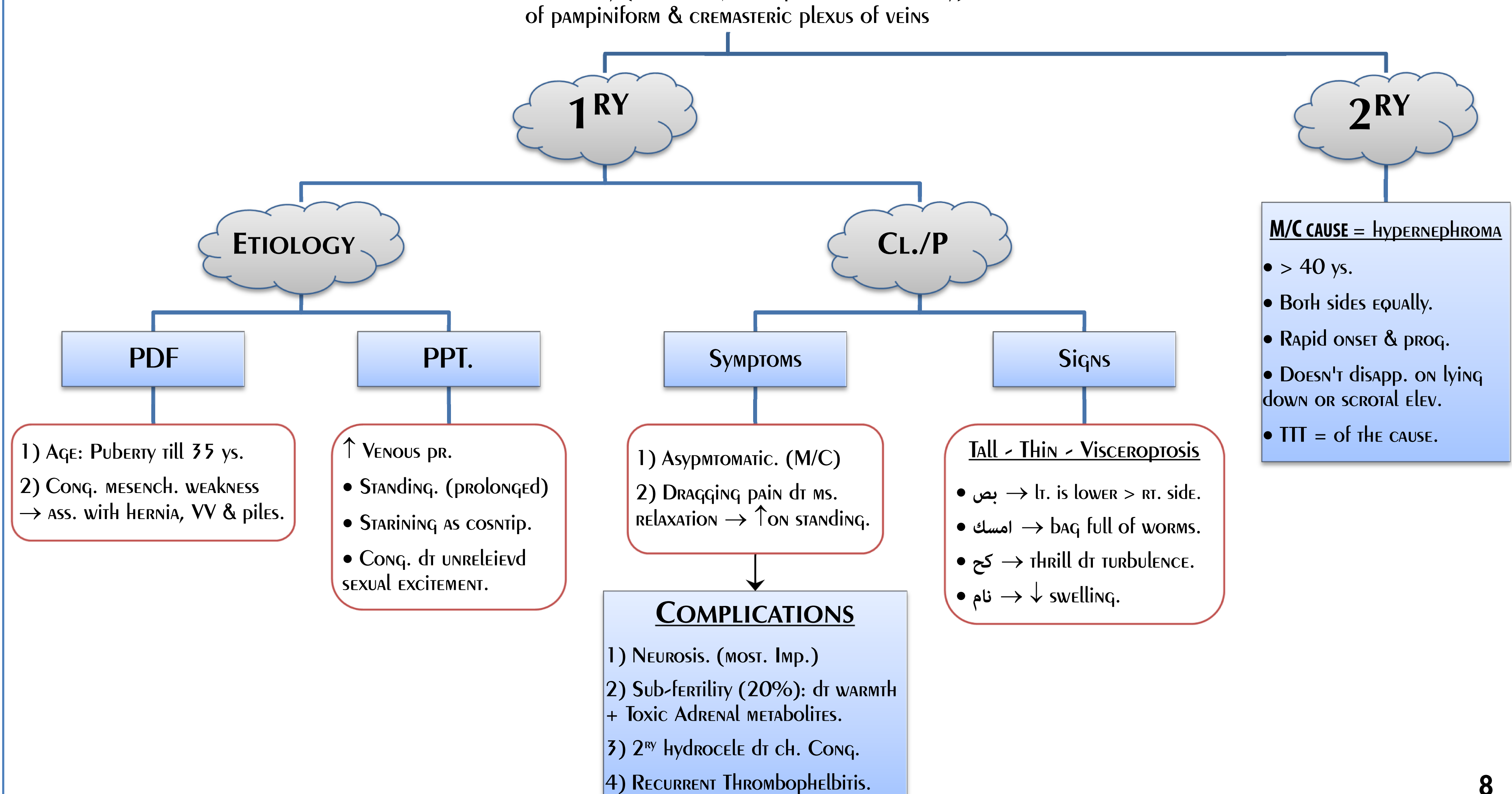
Retractile testis:

- Common in childhood dt active cremasteric ms.
- Chair test or Squatting pos. test.
- No ttt. is required.

Ectopic inguinal	Inguinal arrested
Sites: 1) Superf. Inguinal pouch. ✓ 2) Peritoneum. 3) Root of penis. 4) Femoral triangle. Etiology: traction by side way gubernaculum. (Look wood th.)	Site of Arrest: 1) External ring. 2) Scrotal neck. 3) Inguinal canal. 4) Intra-abd.if bilat. → Cryptochidism.
Straining →Testis more apparent	Less apparent
Testis can be pushed medially	The reverse.
Open Orchipexy as the testicular vs. & vas are of optimal length.	See above

VARICOCELE

It is varicosity (Dilatation, Elongation & torsiousity) of pampiniform & cremasteric plexus of veins



Invest. & TTT. of Varicocele

Invest.

1) Semen Analysis → Stress Triad.
2) Scroal Duplex.
3) Scrotal US for **Grading**.
4) Abd. US to exclude 2ry cause as RCC.

Grading

- 0 = detected by Duplex only.
- 1 = detected by straining.
- 2 = detected by palpation.
- 3 = detected by inspection.

Why Lt. Varicocele > Rt. side?

1) Lt. testicular v.

a) Opens at Rt. angle in the lt. RV.

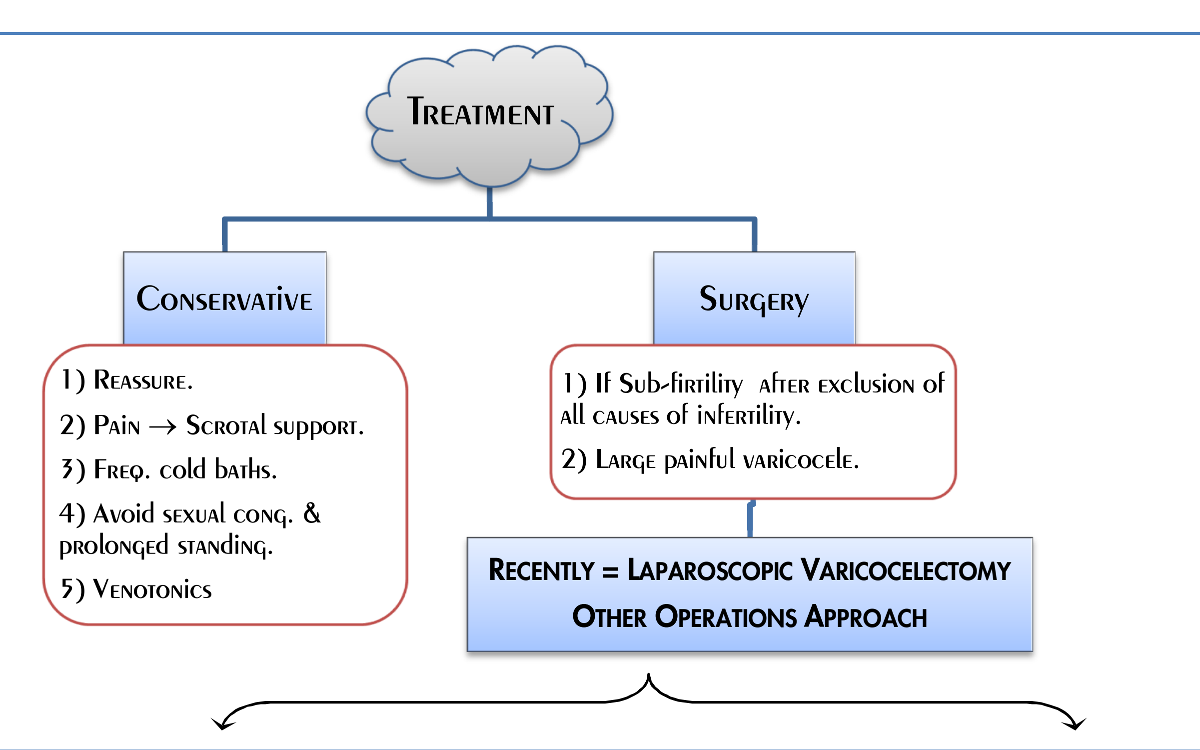
b) Compressed by the sigmoid colon.

c) Opens close to the adrenal veins so its exposed to the action of its metabolites.

d) Longer than the rt. testicular v.

e) Lack of anti-reflux valves at the junction bet. the testicular vein & RV.

2) Lt. RV passes ant. to the Aorta & post. to the SMA. (Nut cracker)



	Retro-peritoneal (Palomo's op.)	Inguinal	Scrotal (not done)
Idea	Ligation & division of the testicular v retro-perit.	Ligation of pampiniform plexus in ing. canal + Excision of ! v. to avoid recanalization	Ligation of pampiniform plexus high in the scrotum
Adv.	No post-op. hydrocele.	No recurrence as ! cremasteric v. is ligated.	
Disadv.	Recurrence as the Cremastric v. is not ligated	Post-op. hydrocele → Eversion of TV is routinely.	Injury of the sympath. NFs. around the pampiniform plexus → Testicular Atrophy!